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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,735	07/25/2003	Leonard Forbes	M4065.0181/P181-B	9702
24998	7590	03/31/2004	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 2101 L STREET NW WASHINGTON, DC 20037-1526			TRA, ANH QUAN	
			ART UNIT	PAPER NUMBER
			2816	
DATE MAILED: 03/31/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,735

Applicant(s)

FORBES, LEONARD

Examiner

Quan Tra

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 67-97 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 67-97 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/25/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “first and second transmission members” “a signal generator (404) having first and second signal outputs coupled to the first and second transmission members respectively”, “a first conductor, a second conductor, a dielectric material, and an evacuated region”, “a signal receiver having first and second signal inputs coupled to the first and second transmission members respectively; first and second signal generators coupled to said first and second transmission members respectively” (claim 87) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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2. Claims 67-97 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-54 of U.S. Patent No. 6380787. Although the conflicting claims are not identical, they are not patentably distinct from each other because both of the Application claims and the patent claims recite the same scope.

Claim Objections

As to Claim 90, “media” should be –medium--.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 75-77 and 87 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 75, the original specification fails to teach the “electrical transmission medium comprises a first conductor, a second conductor, and a dielectric material disposed between said first conductor and said second conductor”.

As to claim 76, the original specification fails to teach “said electrical transmission medium comprises a first conductor; a second conductor; and an evacuated region disposed between said first conductor and said second conductor”.

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As to claim 77, the original specification fails to teach “said electrical transmission medium comprises first and second conductors disposed in a coaxial relationship to one another and a dielectric medium disposed between said first and second conductors”.

As to claim 87 the original specification fails to teach “a signal receiver having first and second signal inputs coupled to the first and second transmission members respectively; first and second signal generators coupled to said first and second transmission members respectively”

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 67, 71-77, 79-81, 88, 89, 92-94, 96 and 97 rejected under 35 U.S.C. 102(b) as being anticipated by Honoa et al. (USP 5376842).

As to claim 67, Honoa discloses in figure 3 a signal transmission system comprising: a first transmission member (412) having a first length, the first transmission member including a transmission medium (inherent); a second transmission member (414) having a second length, the second transmission member including the transmission medium (inherent); a signal generator (404) having first and second signal outputs coupled to the first and second transmission members respectively; and an impedance adjusting component (406) coupled to the second transmission member and adapted to affect, by the coupling thereto, a signal propagation factor of the second transmission member, whereby a relationship may be established between

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respective transmission times through the first and second transmission members of first and second signals received at the first and second transmission members from the respective first and second signal generator outputs.

As to claim 71, figure 3 shows the impedance adjusting component comprises: an electrical capacitor.

As to claim 72, figure 3 shows the relationship established between respective transmission times comprises equalization of the respective transmission times (column 3, lines 5-20).

As to claim 73, figure 3 shows the first length is different from the second length and the respective transmission times through the respective first and second transmission members are equal.

As to claim 74, it is inherent that the transmission medium comprises an electrical transmission medium.

As to claim 75, figure 3 shows the electrical transmission medium comprises a first conductor (412), a second conductor (414), and a dielectric material (inherent) disposed between the first conductor and the second conductor.

As to claim 76, figure 3 shows the electrical transmission medium comprises a first conductor (412); a second conductor (414); and an evacuated region (inherent) disposed between the first conductor and the second conductor.

As to claim 77, figure 3 shows the electrical transmission medium comprises first and second conductors (412, 414) disposed in a coaxial relationship to one another and a dielectric medium disposed between the first and second conductors.

As to claim 79, figure 3 shows the impedance adjusting component comprises a plurality of capacitors coupled to the second transmission member at a respective plurality of coupling points.

As to claim 80, figure 3 shows the first and-second signals comprise first and second digital signals.

As to claim 81, figure 3 shows first and second signal receivers (401, 403) coupled to the first and second transmission members at respective first and second signal inputs.

As to claim 88, figure 3 shows a signal transmission system comprising: a signal generator (404) having first and second signal outputs; a first transmission member (412) coupled to the first output, the first transmission member having a first length, the first transmission member including a first transmission medium (inherent) having a first characteristic impedance; a second transmission member (414) coupled to the second output, the second transmission member having a second length, the second transmission member including a second transmission medium having a second characteristic impedance, whereby a relationship may be established between respective transmission times through the first and second transmission members of first and second signals received at the first and second transmission members from the respective first and second signal generator outputs.

As to claim 89, it is inherent that the first characteristic impedance depends on a magnetic permeability of a material of the first transmission medium.

As to claim 92, figure 3 shows a method of synchronizing first and second operations of respective first and second circuits (401, 403) comprising: receiving a first signal transition at the first circuit through a first transmission member (412), the first transmission member having a

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first signal propagation factor and a first geometric length, the first signal propagation factor related to a first characteristic impedance of the first transmission member; receiving a second signal transition at the second circuit through a second transmission member (414), the second transmission member having a second signal propagation factor and a second geometric length, the second signal propagation factor related to a second characteristic impedance of the second transition member, the second geometric length different from the first genetic length; and receiving the first and second signal transitions at the first and second transmission members synchronously.

As to claim 93, figure 3 shows the receiving the first and second signal transitions at the first and second transmission members synchronously comprises receiving the first and second signal transitions at the first and second transmission members substantially simultaneously.

As to claim 94, figure 3 shows the second characteristic impedance depends on an impedance of at least one impedance (of 406) modifying component coupled to the second transmission member.

As to claim 96, figure 3 shows the impedance modifying component comprises a capacitor.

As to claim 97, figure 3 shows the second characteristic impedance depends on a magnetic permeability of a material incorporated into the second transmission member (it is inherent that transmission line 414 having parasitic inductance).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 68-70, 82, 91 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honoa et al. (USP 5376842).

As to claim 68, Honoa et al.'s figure 3 shows all limitations of the claim except the impedance adjusting component comprises: an electrical inductor. However, it is notoriously well known in the art that the impedance of parallel connected capacitor is equal to the impedance of serial connected inductor (impedance of capacitor is $1/j\omega C$, and impedance of inductor is $j\omega L$). Therefore, it would have been obvious to one having ordinary skill in the art to use series connected inductors for the impedance adjusting component due to doctrine equivalent function.

As to claims 69 and 95, the modified Honoa et al. fails to shows the electrical inductor comprises a spiral inductor. However, it is well known in the art that spiral inductor is used in high speed environment. Therefore, it would have been obvious to one having ordinary skill in the art to use spiral inductors for the impedance adjusting component for the purpose of operating in a high speed environment.

As to claim 70, the modified Honoa et al.'s shows impedance adjusting component comprises: a material (the newly added inductors) having; a magnetic permeability, the material adapted to be incorporated into the second transmission member.

As to claim 82, Honoa et al. fails to show "the first input has an input impedance substantially equal to a characteristic impedance of the first transmission member and the second input has an input impedance substantially equal to a characteristic impedance of the second

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transmission member". However, it is notoriously well known in the art that the input impedance of a receiving circuit is equal to the output impedance of a transmission line will prevent reflection in the transmission line, thereby saving power consumption. Therefore, it would have been obvious to one having ordinary skill in the art to make the input impedances of the first and second receiver circuits to be equal to the impedance of the first and second transmission lines for the purpose of saving power consumption.

As to claim 90, the modified Honoa et al.'s figure 3 shows a communication circuit comprising: a signal transmitter (404); first and second transmission media (412, 414) coupled to the signal transmitter; first and second receiving circuits (401, 403) coupled to the first and second transmission media respectively; means (not shown) for equalizing an input impedance of the first receiving circuit and a first characteristic impedance of the first transmission medium (see the rejection of claim 82); means (not shown) for equalizing an input impedance of the second receiving circuit and a second characteristic impedance of the second transmission medium; and means (406) for differentiating the first characteristic impedance from the second characteristic impedance.

As to claim 91, figure 3 shows the first and second transmission media are disposed over a common integrated circuit substrate (inherent).

6. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art in view of Honoa et al. (USP 5376842).

As to claim 78, Applicant admitted in the "back ground of invention" that clock distribution circuit is used in optical medium. The prior art fails to shows a detail of the clock distribution. However, Honoa et al.'s figure 3 shows a details of clock distribution circuit (see

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the rejection of claim 67) having the advantage of reducing clock skew. Therefore, it would have been obvious to one having ordinary skill in the art to use Honoa et al.'s clock distribution circuit in an optical medium for the purpose of reducing clock skew.

7. Claims 83-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honoa et al. (USP 5376842) in view of Applicant admitted prior art in (USP 6377084).

Honoa et al.'s figure 3 shows all limitations of the claims except for the first signal receiver comprises a pseudo differential amplifier. However, the admitted prior art figure 2 in USP 6377084 shows a pseudo differential amplifier that can response more rapidly than other amplifier. Therefore, it would have been obvious to one having ordinary skill in the art to use the prior art figure 2 for Honoa et al.'s receivers for the purpose of improving the operational speed.

As to claim 84, the prior art figure 2 in USP 6377084 shows the pseudo differential amplifier comprises a current sense amplifier and wherein the first signal comprises a current signal.

As to claim 85, the prior art figure 2 in USP 6377084 shows the current sense amplifier comprises a current mirror circuit (T5, T6).

As to claim 86, Honoa et al. fails to teach the first receiver comprises a first input adapted to be coupled to the first transmission member and a second input adapted to be coupled to a reference signal source. However, the admitted prior art figure 1 in USP 6377084 shows a receiver comprises a first input adapted to be coupled to a transmission member and a second input adapted to be coupled to a reference signal source (ground). The prior art figure 1 having the advantage of rejecting power supply noise. Therefore, it would have been obvious to one

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having ordinary skill in the art to use the prior art figure 1 in USP 6377084 for Honoa et al.'s receivers for the purpose of rejecting power supply noise.

8. Claim 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art in (USP 6377084) in view of Honoa et al. (USP 5376842).

As to claim 87, the prior art figure 2 in USP 6377084 shows a signal transmission system comprising: a first transmission member (I1) having a first length, the first transmission member including a transmission medium (inherent); a second transmission member (I2) having a second length, the second transmission member including the transmission medium (inherent); a signal receiver (the differential amplifier) having first and second signal inputs coupled to the first and second transmission members respectively; first and second signal generators (the transistors that generate Isignals) coupled to the first and second transmission members respectively. Thus, figure 2 shows all limitations of the claim except for "an impedance adjusting component coupled to the second transmission member". However, Honoa et al.'s figure 3 shows a signal transmission system having an impedance adjusting component (406) coupled to the second transmission member (416) in order to reduce clock skew. Therefore, it would have been obvious to one having ordinary skill in the art to add an impedance adjusting component to one of the transmission member in the prior art figure 2 of USP 6377084 for the purpose of reducing signal skew.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Quan Tra', with a long horizontal flourish extending to the right.

Quan Tra
Patent Examiner

March 24, 2004